REMARKS

Claims 1-6, 8-10 and 12-18 are currently pending.

By the foregoing amendments, applicants have proposed to more concisely define the present invention in a manner that patentably distinguishes the same over the cited prior art. In addition to these amendments, applicants have submitted a declaration under 37 C.F.R. 1.131 to effectively 'swear behind' the reference to Emsley et al, relied upon in each of the rejections tendered in the outstanding office Action. With the removal of the Emsley et al reference as available prior art, it is respectfully submitted that the rejections have been overcome, and that the claims are now in condition for allowance. Notwithstanding such removal of the Emsley et al reference as available prior art, it is also respectfully submitted that the claims patentably distinguish over all the cited prior art, as will be discussed. Consequently, favorable consideration of the present application in light of the foregoing amendments, enclosed declarations, and the following remarks is respectfully requested.

More particularly, the rejection of claims 1, 3-6, 8-10, 12-16 and 18, under U.S.C. 103(a), as being unpatentable over Emsley et al in view of Schmidt et al, as set forth on pages 5-7 of the outstanding Office Action, alleges that the claimed invention is obvious in view of Emsley et al's description of a test meter that includes:

> "signal conditioning circuitry having a plurality of signal conditioning circuits (page 2, paragraph 24, lines

1-9), each signal conditioning circuit corresponding to one digital standard in a plurality of digital standards (figure 2, parts 86 and 88; page 2, paragraph 24, lines 1-9))"

However, applicants respectfully submit that there are several substantial aspects of the rejected claims which cannot be inferred from the disclosure of Emsley et al.

Emsley et al describe band pass filter for conditioning the input signal that is *either* in accordance with the 6 MHz standard *or* the 8 MHz standard, but not both, concurrently. In fact, Emsley et al describe that the bandpass filter part 86 in figure 2 is *either* for the European signal *or* the U.S. signal (*Emsley et al*, paragraphs [0024], [0025], [0130]). It should be also noted that Emsley et al are silent as to what, if any, digital standards apply to bandpass filter (BPF) part 88.

Perhaps the reason why Emsley et al do not indicate which digital standards apply to the BPF part 88 is that it should be clear to a skilled practitioner that this BPF is intended for analog measurements only, as is employed as a component of the generally accepted method for measuring the signal level of a television (or similar signal) channel. This technique involves sampling a narrow spectral slice (here Emsley et al recite 17 KHz, although part 88 has a bandwidth of 150kHz for the purposes of pre-filtering), normally taken from the center of the channel to be evaluated. The spectral slice is down-converted to 10.7 MHz, so that conventional ceramic or crystal filter components can be used.

This is in contrast to the surface acoustic wave (SAW) part 86, which is commercially available at different center frequencies and bandwidths, depending on applicable local standards. In view

of this common signal level measurement practice, it is improbably for someone skilled in the art to regard this as pertaining to a "digital" standard.

Moreover, it is readily apparent that neither 17 KHz nor 150 KHz provides sufficient bandwidth, for implementing digital television standards. A close examination of Figure 2 of Emsley et al reveals that there are, in fact, four similar filters, serially cascaded in the circuit (parts 88, 96, 102 and 106), all with a center frequency fixed at 10.7 MHz. For the latter three, there are no counterparts with a bandwidth of 6 MHz or 8 MHz, further underscoring the completely differing functions and properties of the two signal paths, between which the circuit in Figure 2 can be switched.

While it is recognized that Emsley et al go into great detail in describing how their instrument is capable of measuring the signal level using a digital calculation method, which implements all of the channel signal bandwidth (paragraphs [0032] to [0045]), the inclusion of a switch to permit the traditional method for signal level measurement at 10.7 MHz would be generally seen as motivated by a need for fulfilling network operators' specifications, regulatory requirements, or for legacy and backward compatibility reasons.

Again referring to Figure 2 of Emsley et al, and its associated description, the switches 84, 90, 94, 100 and 110 all operate in concert. The overall effect is that the signal from switch 90, which selects between the outputs of BPF 86 and BPF 88, follows entirely different signal conditioning paths. For instance, the signal from BPF 88 passes through three additional filters, whereas that from BPF 86 does not.

Such an architecture teaches away from applicants' claimed invention, which employs a ***single*** signal path following the bandwidth selector (e.g. block 34 in Figure 3, block 44 in Figure 4 and block 68 in Figure 5). This is also set forth in the description, where signals from all the different applied digital standards are presented in the same way to the demodulation and analysis circuitry.

Thus, it is respectfully submitted that the disclosure of Emsley et al does not described or suggest a plurality of signal conditioning circuits, each corresponding to a digital standard, from which one circuit may be selected to condition the digital signal, as inaccurately alleged in the Office Action.

To more concisely define the invention, claim 1 has been amended to recite that the signal conditioning circuitry is operative:

"to output a digital channel signal".

This phrase defines the output of the signal conditioning circuit as containing the full channel information for further analysis, in contrast to the partial channel information which exits from the BPF 88 in Figure 2 of Emsley et al.

The remaining minor amendments to claim 1, as well as to dependent claim 6, provide consistency of terminology with the above phrase.

To further emphasize the distinction between the cited prior art and the invention, the term "CATV" has been inserted as a qualifier to digital standard(s) in claims 1, 10 and 16, as well as their dependent claims 2-6, 12-14 and 17, respectively.

With respect to the cited reference to Schmidt et al, the Office Action alleges that:

> "Schmidt discloses a system using a user interface operative to allow a user to select the digital signal (column 5, lines 63-67)".

Turning to the text of the citation, Schmidt et al, column 5, lines 63-67, and column 6, lines 1-3, describe that:

> "The front panel controls 54 of the measurement test instrument 10 are used to call a set-up routine stored in memory 50 for allowing an operator to set measurement parameters including a center frequency and frequency span for the instrument as shown in step 60, and a start frequency, a stop frequency, and an amplitude threshold for a spectral frequency measurement window as shown in step 62."

The measurement parameters listed by Schmidt et al, such as center frequency and span, start and stop frequency, reflect the typical use of a spectrum analyzer type of instrument. Schmidt et al do not list, or anywhere mention, selecting digital signal standards.

Thus it would not be possible for an operator to select a digital standard on this instrument without additional information external to the instrument itself. In fact, the operator could easily set measurement parameters which do not correspond to any particular standard, thereby precluding certain types of analysis that could be done on the network performance.

In contrast, the claimed invention provides for the selection

of digital standards by an operator, thus obviating the need to explicitly know the start and stop frequencies, or the center frequency and span of any selected signal. In the absence of a description pertaining to the selection of digital standards, the disclosure of Schmidt et al cannot be regarded as suggesting the features embodied in the claimed invention.

In a like manner, claim 10 has been amended to incorporate the word "television", to qualify the signal which is output from the signal conditioning circuits, thereby further contrasting it with Emsley et al.

With regard to claim 16, it is respectfully submitted that phrase "digital encoding standards" clearly differentiates it from the disclosure of Emsley et al, since, as described above, Emsley et al's 10.7 MHz signal does not correspond to such standards. Even if the channel under test were to correspond to a digital encoding standard of typically 6 MHz - 8 MHz, truncating such a signal to 150 KHz or 17 KHz would destroy any encoding that may have been present. The 10.7 MHz signal used in Emsley et al's instrument can only be used for analog signal level measurements.

In the rejection of claim 3, it has been alleged that Emsley et al's system contains multiple filters. While it is true that their system can be switched between two different filters (bandpass filters, part 86 and part 88, in Figure 2), it has already been demonstrated above that only one of the filters (part 86) has bandwidth sufficient to pass signals according to a digital CATV standard. Emsley et al's description emphasizes these key differences by stating that part 86 is constructed using surface acoustic wave (SAW) filter technology, while part 88 is constructed using ceramic filter technology.

With regard to claim 12, the bandpass filter 88 in Emsley et al's Figure 2 does not correspond to a filter that is capable of performing signal conditioning according to a digital CATV standard, because its bandwidth is too narrow (by a factor of at least 36).

The bandpass filter 88 of Emsley et al is not capable of performing signal conditioning on the "obtained digital television signal", as claimed in claim 13, since its bandwidth is incompatible with such signals.

Claims 8 and 9 have been rejected based on the premise that a modified system of Emsley et al contains all their limitations. However, it has been previously demonstrated that the suggested modification of Emsley et al's system is not as obvious for the reasons detailed in connection with claims 1, 10 and 16. Therefore, neither claims 8 and 9, nor claims 15 and 18, is obvious over Emsley et al.

In the rejection of claims 2 and 17, it has been alleged that it would have been obvious to combine the systems of Emsley et al and Liu et al, in order to provide a testing apparatus capable of receiving and demodulating signal information content that has been transmitted in accordance to ITU-T Annex A, B, and C standards.

However, as noted previously, in connection with amended claim 1, Emsley et al's system supports only one digital standard, at a time. Although Liu et al describes a system with decoding support for Annex A, B, and C standards, even if combined with Emsley et al's apparatus, Liu et al can still decode only the available standard provided by Emsley et al's front end. This is in contrast to applicants' claimed invention, where an operator can select one

of several digital standards to present to the decoder. Thus, the combination of Emsley et al, Schmidt et al and Liu et al does not disclose all the limitations of claims 2 and 17.

The Office Action further alleges that claims 4-6 and 14 are unpatentable over Emsley et al in view of Schmidt et al as applied to claims 1 and 16, and further in view of Kitamura (U.S. Patent No. 4,303,944).

In column 2, lines 19-28 Kitamura describes:

> "The television set is provided with four switches S_1 through S_4 in order to receive either the American or European system television signals. The first and second switches S_1 and S_2 are switched in order to select a resonant frequency depending upon a corresponding sound intermediate frequency; the third switch S_3 is switched so as to select a television channel; and the fourth switch S_4 is switched so that a predetermined amplitude is maintained irrespective of the field frequency. These switches S_1 through S_4 are so ganged that they can be operated simultaneously."

Kitamura's disclosure is concerned with analog TV tuners, which are voltage-controlled. While the circuits he discloses provide suitable tuning voltages for selecting resonant frequencies for European and U.S.A. VHF TV systems, Kitamura makes no reference to digital standards, bandwidths or filters. In particular, neither his description nor drawings indicate a means for selecting different filters, as is claimed.

As noted above, Emsley et al's apparatus operates with only a single standard at a time - *either* European *or* North American.

Emsley et al was silent on how to provide support for additional standards.

In contrast to the conclusion reached in the Office Action, Applicants respectfully submit that it is not obvious, from Kitamura's disclosure, to provide first and second filters to filter a first and second bandwidth, respectively. Thus, a combination of Emsley et al apparatus and the analog TV tuner system of Kitamura does not encompass all of the limitations of claims 4-6 and 14, wherein "digital standards" are explicitly defined, each with a separate filter having the corresponding center frequency and bandwidth.

With regard to the rejection of claim 8 over Emsley et al in view of Schmidt et al, as applied to claim 1, and in further view of Hessel et al, the following comments are offered.

Hessel et al provides the following description, in column 4, lines 38-46:

> "FIG. 3 describes a field programmable radio frequency communications system that can be programmed by a user to form a digital signal processing system 10 that is adapted to be coupled to a radio frequency receiver and or transmitter subsystem 12 to configure a radio frequency receiver and/or transmitter system to operate with any of a plurality of radio frequency waveforms or signaling schemes, such as, AM, AME, A3E, H3E, J3E, CW, SSB, M-PSK, QAM, ASK, and angular modulation, such as, FM, PM, FSK, CMP, MSK, CPFSK etc."

Hessel et al's apparent objective is to improve radio performance through a refinement of carrier frequency estimate

modulation and signaling used. The radio frequency waveforms or signaling schemes Hessel et al lists are very general, many of which do not apply to digital signals, as used in a network such as CATV. In the absence of more specifics, his disclosure contains nothing that would suggest which of these, and in what manner, are applicable to extending the capability of a network analysis apparatus, such as that disclosed by Emsley et al.

It should be noted that Emsley et al do not disclose or suggest any means whereby their apparatus can be extended to apply various radio signal digital demodulation schemes. As pointed out previously, the circuit of Emsley et al's Figure 2 precludes successful demodulation of signals, whenever the 10.7 MHz filter circuit is selected, thus teaching away from further demodulation.

In view of the foregoing, favorable reconsideration of this application, and a Notice of Allowability of claims 1-6, 8-10 and 12-18 are respectfully requested.

Should any minor informalities need to be addressed, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number listed below.

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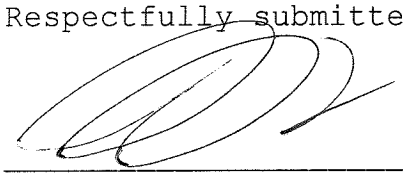
Respectfully submitted,



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